

Work Order ID 91236

October-03-12 2:44:39 PM

91236

Page 1

Item ID: D6101-001

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Saddle Billet

Start Date: 03/10/2012 Start Qty: 60.00

60

Cust Item ID:

Required Date: 09/01/2013 Req'd Qty: 60.00

60

Customer:

Reference:

Approvals: Process Plan: MLS

Date: 12-10-03 Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|---|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| Draw Nbr | Revision Nbr | | | | | | | | |
| D6101 | Rev B | | | | | | | | |
| 100 | PURCHASING | 0.00 | | | | | | | |
| *100* | | | | | | | | | |
| Purchasing | Memo | 0.00 | | | | | | | |
| Purchasing | Issue P/O: <u>18082</u> | | | | | | | | |
| | a) Description: Aluminum billet | | | | | | | | |
| | b) 6.00" x 6.250" x 2.00" thick | | | | | | | | |
| | c) Tolerance on length are +0.030"/-0.000" \pm 0.008" | | | | | | | | |
| | d) Grain direction along 6.00" length | | | | | | | | |
| | e) Material: 7075-T7351 (QQ-A-250/12) | | | | | | | | |
| | f) Material certification required | | | | | | | | |
| 110 | Receive & Inspect for Damage & Mat'l Certs | 0.00 | | | | | | | |
| *110* | | | | | | | | | |
| Packaging | Memo | 0.00 | | | | | | | |
| Packaging | Ensure material certification is attached | | | | | | | | |

CL 12/10/03 (60)

CL 12/11/12 (60)

Work Order ID 91236

October-03-12 2:44:39 PM

91236

Page 2

Item ID: D6101-001

Accept

N900040100Setup Start ***NS1***

Revision ID:

Item Name: Saddle Billet

Stop ***NS2***

Start Date: 03/10/2012 Start Qty: 60.00

60

Cust Item ID:

Required Date: 09/01/2013 Req'd Qty: 60.00

60

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

120

QC6- Inspect dimensions to drawing

0.00

120

QC

Memo

0.00

Quality Control

Ensure Material certification comply to Dwg D

OK 12/11/20

60 0

DAS
14
9-89

130

Identify as per dwg & Stock Location: MAT45 0.00

130

Packaging

Memo

0.00

Packaging

F.K. - 12/11/20

60 0

140

QC21- Final Inspection - Work Order Release 0.00

140

QC

Memo

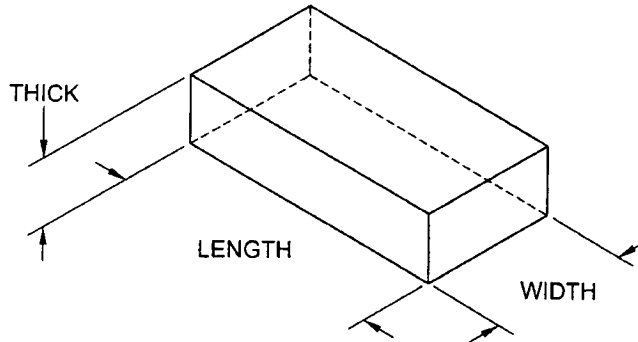
0.00

Quality Control

12/11/20 JF

MF
12-11-20

SPECIFICATION CONTROL DRAWING



PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.030/-0.000), AND GRAIN DIRECTION AS SHOWN.

TOLERANCES ON ALL DIMENSIONS ARE +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES.

B ACCEPTABLE SPECIFICATIONS FOR 7075-T7351 ALUMINUM ARE AMS-QQ-A-250/12, QQ-A-250/12, OR ASTM B209

| Part No. | Alloy | Length | Width | Thick | Grain Direction |
|-----------|--------------------------|--------|-------|-------|--------------------|
| D6101-001 | 7075-T7351 (QQ-A-250/12) | 6.000 | 6.250 | 2.000 | Along 6.000 Length |
| D6101-003 | 7075-T7351 (QQ-A-250/12) | 7.875 | 6.250 | 2.000 | Along 7.875 Length |
| D6101-005 | 7075-T7351 (QQ-A-250/12) | 5.000 | 8.250 | 2.500 | Along 5.000 Length |
| D6101-007 | 7075-T7351 (QQ-A-250/12) | 7.750 | 8.250 | 2.500 | Along 7.750 Length |
| D6101-009 | 7075-T7351 (QQ-A-250/12) | 8.700 | 8.250 | 2.500 | Along 8.700 Length |
| D6101-011 | 7075-T7351 (QQ-A-250/12) | 9.700 | 8.250 | 2.500 | Along 9.700 Length |
| D6101-013 | 7075-T7351 (QQ-A-250/12) | 10.100 | 8.250 | 2.500 | Along 10.10 Length |
| D6101-015 | 7075-T7351 (QQ-A-250/12) | 9.450 | 6.250 | 2.500 | Along 9.450 Length |
| D6101-017 | 7075-T7351 (QQ-A-250/12) | 6.350 | 6.250 | 2.250 | Along 6.350 Length |
| | | | | | |

RELEASED
09/01/15/W

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RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO 91236 mcs
12-10-03

| | | | |
|------------|-------------------------------------|--|--------------|
| B | ADDED D6101-015/-017, ADD ASTM B209 | RF | 09.04.23 |
| A | NEW ISSUE | CP | 01.03.30 |
| REV. | DESCRIPTION | BY | DATE |
| DESIGN | CP | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
| DRAWN | RF | | |
| CHECKED | <i>[Signature]</i> | DRAWING NO. | REV. B |
| MFG. APPR. | <i>[Signature]</i> | D6101 | SHEET 1 OF 1 |
| APPROVED | <i>[Signature]</i> | TITLE | SCALE |
| DE APPR. | <i>[Signature]</i> | SADDLE BILLET, 7075 | NTS |
| DATE | 09.04.23 | <small>COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small> | |

**Castle Metals®**

A. M. Castle & Co.

BORDEREAU DE MARCHANDISES

Page 1 of 2

No de Formulaire d'Emballage / Shipment No:1543272

| | | | | | | | |
|---|--|--|--|---|---|--|--|
| Expédié de / Ship From: A. M. Castle & Co. (Canada) Inc. MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2 | | Vendu à / Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA | | Expédié à / Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN | | Livré à / Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA | |
| Date d'expédition / Date Shipped 15-NOV-2012 | | F.O.B. ORIGIN | Modalités de transport / Freight Terms Prepaid | | Transporteur / Carrier MANITOULIN | | No du Bon de connaissance / BOL No 1543272-2 |

| | | | | | | | |
|--|--|--|--|--|--|--|--|
| Détails d'expédition / Shipment Details | | | | Destination finale / Final Destination Branch - MON | | | |
|--|--|--|--|--|--|--|--|

| | | | | | | | |
|--|--|--------------------------------------|------------------------|---------------------|---|----------------------------------|-----------------------------------|
| N° de commande / Order No | | N° de ligne Line No | N° d'article / Item No | | Description | | |
| 2520372 | | 1 | 752237.MO | | 2.0000.PL.7075.T7351.ALUMINUM.USI.48.5000.144.5000 CUT RECTANGLE TO 6.25 IN () X 6 IN () SPECIFICATIONS: SHIP JANUARY 3RD ONLY QQ-A-250/12 | | |
| N° de bon de commande / Purchase Order No | | Nbre de pièces / Part Number | | | Qté commandée / Ordered Qty | | Qté Facturée / Invoice Qty |
| 18082 | | YOUR ITEM NUMBER: D6101-001 | | | 60.00 PCS | | 60.00 PCS |
| Détails / Details | | SHIP JANUARY 3RD ONLY QQ-A-250/12 | | | | | |
| N° de livraison / Delivery No : | Usine / Mill | No de coulée / Heat Number | Code méc / Mech Id | Pièce s / PCS | Largeur (Pouce)/ Width (IN) | Longueur (Pouce)/ Length (IN) | Qté expédiée/ Shipped Qty(LBS) |
| 118154126 | MATERIALS TECHNOLOG Y SOLUTIONS | 605568A5 | | 60 | | | 464.4958 |

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14
9-83

mf 12/11/20

Ces marchandises/technologies sont sujettes aux règlements de l'Export Administration et du département d'état des Etats-Unis. Si elles ont été/sont exportées, elles doivent se conformer à ces règlements. Toute modification du contrat de transport contraire aux lois des États-Unis est interdite.

These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.

Nous certifions par la présente que le matériel couvert par cette certification est conforme aux spécifications susmentionnées et aux exigences applicables pour le matériel, y compris toute spécification faisant partie de la description. Les rapports d'

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Castle Metals®

A. M. Castle & Co.

BORDEREAU DE MARCHANDISES

Page 2 of 2

essai sont archivés pour fins de consultation. Toute requête concernant du matériel défectueux sera rejetée à moins qu'elle ne soit faite par écrit à A. M. Castle & Co. dans les 60 jours suivant la livraison. Le matériel coupé sur mesure ou coupé par le client ne peut être retourné pour crédit.

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.

Ce matériel a été reçu et inspecté par

Reviewed by Authorized Castle Metals Representative:

Date:

Name:

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4275282

ALLOY LIMITS

| 7075 | SI | FE | CU | MN | MG | CR | ZN | TI | V | ZR | OTHER | MAX |
|----------|------|------|-----|------|-----|------|-----|------|------|------|-------|------|
| MIN(wt%) | 0.00 | 0.00 | 1.2 | 0.00 | 2.1 | 0.18 | 5.1 | 0.00 | 0.00 | 0.00 | EACH | 0.05 |
| MAX(wt%) | 0.40 | 0.50 | 2.0 | 0.30 | 2.9 | 0.28 | 6.1 | 0.20 | 0.05 | 0.05 | TOT | 0.15 |

Aluminum Remainder

TEST NOTES

Metal represented by this test report was 100% immersion ultrasonically tested from one side with 3mm dead zones top and bottom and meets the Class A and Class B requirements of all specifications referenced on this test report. No surface marking of sonic indications is performed.

Castle Metals Men

HEAT NUMBER 605568A5
MECHANICAL ID _____
ITEM CODE 752237-B0
LOT NUMBER 2781925 MON
PO NUMBER 17267
RECEIPT DATE 11-13-12
SUPPLIER MTR
SPECIFICATION AMS QQ-A-250/12
LCS _____
COMMENT _____
APPROVED g

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DAS
ok 12/1/12

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC (Kaiser) hereby certifies that metal shipped under this order was melted in the United States of America or a qualifying country per DFARS 225.872-1(a), was manufactured in the United States of America, and meets the requirements of DFARS 252.225 for domestic content. This material has been inspected, tested and found in conformance with the requirements of the applicable specifications as indicated herein. For material thicknesses outside specification limits, mechanical properties are as shown herein and chemical composition meets specification requirements. All metal which is solution heat treated complies with AMS 2772. Any warranty is limited to that shown on Kaiser's standard general terms and conditions of sale. Test reports are on file, subject to examination. Test reports shall not be reproduced except in full, without the written approval of Kaiser Aluminum Fabricated Products, LLC laboratory. The recording of false, fictitious or fraudulent statements or entries on the certificate may be punished as a felony under federal law. ISO-9001:2000 certified.

James Hemenway

JAMES HEMENWAY, LABORATORIES SUPERVISOR

Item 752237-Bo Po 17267 2 pages

| | | | | | | |
|--|-------------------------|--|-------------------------------------|---|--------------------------------------|-------------------------------------|
| SHIP TO: HADCO METAL TRADING CO. LLC 2811 CHARTER RD PHILADELPHIA, PA 19154 | | KAISER ALUMINUM Trentwood Works - Spokane, WA 99215 Phone: (800) 367-2586 CERTIFIED TEST REPORT Serial Number 4275282 | | | | |
| SOLD TO: HADCO METAL TRADING CO. LLC 2811 CHARTER RD PHILADELPHIA, PA 19154 | | | | | | |
| CUSTOMER PO NUMBER: 036929 | WORK PACKAGE: | CUSTOMER PART NUMBER: | SHIP RUN/LOAD: 102420/22 | GOV'T CONTRACT NUMBER: | | |
| KAISER ORDER NO: 1135384 | LINE ITEM: 8 | SHIP DATE: 10-SEP-2012 | ALLOY: 7075 | CLAD: BARE | TEMPER: T7351 | PRODUCT DESCRIPTION: Sawed Plate |
| WEIGHT SHIPPED: 5324 LB | QUANTITY: 3 PCS EST. | TRUCK B/L #: 2038751 | GAUGE: 2.0000 IN (50.8000 MM) | DIAMETER/WIDTH: 60.500 IN (1538.7 MM) | LENGTH: 144.500 IN (3670.3 MM) | |

MHU 1618538: LOT 605568A5: 2 pieces;
MHU 1618539: LOT 605568A5: 1 pieces;

Certified Specifications

AMS 4078/RevJ
ASTM B 208/Rev10
BSS 7055/RevA
DPS 4.713/RevAH
MMS 159/RevT

AMS-QQ-A-250/12
ASTM B 594/RevO9
CMMP 026/RevU
GAMPS 9101/RevB
PPS 20.04/Rev7

AMS-STD-2154/Rev98
BAC 5439/RevH
CSTI 006/RevD
GSSI 16100/RevG/Amd1
PS 21211/RevL

Test Code: 4297

Test Results

Lot: 605568A5 Cast 487 Drop 07 Ingot 3 Melted in USA

(ASTM E8/B567)
(EN 2002-1)

| Tensile: | Temper | Dir / # Tests | Ultimate KSI (MPA) | Yield KSI (MPA) | Elongation % |
|----------|--------|------------------|----------------------------|----------------------------|--------------|
| | T7351 | LT / 2 (Min:Max) | 69.3 : 70.2 (478 : 484) | 57.0 : 59.0 (393 : 407) | 11.5 : 11.9 |

(ASTM E1004)
(EN 2004-1)

| Conductivity %IACS : | 41.0 Min | 41.2 Max |
|----------------------|----------|----------|
| (MS/M) : | 23.8 Min | 23.9 Max |

(ASTM E1251)

| Chemistry: | SI | FE | CU | MN | MG | CR | ZN | TJ | V | ZR | OTHER |
|-------------|------|------|-----|------|-----|------|-----|------|------|------|----------|
| Actual(wt%) | 0.08 | 0.17 | 1.4 | 0.02 | 2.4 | 0.20 | 5.6 | 0.03 | 0.01 | 0.01 | TOT 0.05 |

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08/21/12